

REMARKS

Claims 1 through 8, 10 and 11 and new Claim 12 are pending in the application.

Claim 12 has been added to complete the record for examination and highlight advantageous embodiments of the invention.

Claim 12 is directed to advantageous processes for preparing cyclic phosphonic anhydride that include reacting phosphonic acid derivative with acetic anhydride and simultaneous distillative removal of a mixture of acetic acid and acetic anhydride, with subsequent reactive distillation of the resulting oligomeric phosphonic anhydride and conversion to the corresponding cyclic trimeric phosphonic anhydride. Support for Claim 12 can be found in the Application-as-filed, for example in Claim 1 as-filed.

Reexamination and reconsideration of this application, withdrawal of all rejections, and formal notification of the allowability of the pending claims are earnestly solicited in light of the remarks which follow.

Submission of Terminal Disclaimer

Claims 1 through 8, 10 and 11 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting in light of co-pending Application No. 12/061,124. Solely to advance prosecution of the case and without addressing the merits of the rejection, Applicants respectfully submit herewith a terminal disclaimer, as suggested by the Examiner. More particularly, Applicants submit herewith a terminal disclaimer that disclaims the terminal part of any patent granted on the above-identified application extending beyond the expiration date of the full statutory term which may ultimately result from the cited co-pending application, i.e. Application No. 12/061,124.

Consequently, Applicants respectfully submit that the outstanding double patenting rejection be withdrawn upon entry of the enclosed terminal disclaimer.

Unity of Invention

Applicants respectfully make of record that Applicants' election of the process claims of Group I on March 25, 2008 was without traverse, in contrast to the statement to the contrary within the outstanding Office Action.

Applicant further respectfully make of record that the election of a species within the process claims of Group I was made with strong traverse. Applicants respectfully reiterate that the claimed invention is directed to advantageous processes. The advantageous inventive processes may be used to form a wide variety of cyclic trimeric phosphonic anhydrides, as indicated by the recited chemical formula III.

Applicants respectfully submit that unity of invention does exist, in contrast to the urgings of the Office Action on Page 3, third full paragraph. In particular, the recited processes are "specially adapted" for the manufacture of the products of chemical formula III, i.e. cyclic trimeric phosphonic anhydrides, and the claimed processes inherently produce the claimed cyclic trimeric phosphonic anhydride, with the technical relationship being present between the claimed process and product recited within the claimed process. MPEP 1893.03(d) and 37 CFR 1.475(b)(1).

Applicants respectfully submit that the recited product species within the process claims are merely presented as alternative products that may be formed by the inventive processes. Applicants further respectfully submit that the final products do, in fact, all have a common structure, i.e. each product is a cyclic trimeric phosphonic anhydride.

Applicants further respectfully reiterate that the R-group alternatives have a common property, i.e. they are each pendant groups, and each R belongs to a recognized class of chemical compounds, i.e. organic compounds. Furthermore, there is an expectation that all recited R-group members could readily alternatively be formed by the inventive processes. Accordingly, Applicants respectfully reiterate their request for withdrawal of the foregoing species restriction.

Out of an abundance of caution and solely to ensure pendency of the above-referenced case, Applicants maintain their provisional election (for search purposes) with strong traverse the species defined in Claim 10. Should the embodiments of Claim 10 likewise be deemed overly broad for search purposes, Applicants alternatively provisionally elect with strong traverse the species defined in Claim 11.

Furthermore, Applicants respectfully submit newly added Claim 12, reciting no chemical formulae, as a further alternative provisional election, should the Examiner ultimately deem such necessary.

The Claimed Invention is Patentable in Light of Weferling and Watanabe

The outstanding Office Action at Page 3, third full paragraph, apparently indicates that the claimed process stands rejected (either provisionally or currently) in light of Weferling et al. CAS: 134: 42263 or Watanabe et al. CAS: 116:132130. Applicants respectfully submit that Weferling and Watanabe do not teach or suggest the claimed processes, considered either alone or in combination.

Weferling discloses the photochemical reaction of phosphoric acid with olefins in the presence of a radical initiator. The photochemical reaction is more specifically between phosphoric acid and polypropylene in the presence of a particular free radical initiator.

Weferling, directed to methods involving free radical polymerization of olefins, does not teach or suggest the recited methods of reacting a phosphonic acid derivative with acetic anhydride.

And Weferling, merely disclosing an olefinic addition reaction, most certainly does not teach or suggest the inventive methods that include simultaneous distillative removal of a mixture of acetic acid and acetic anhydride and subsequent reactive distillation of the oligomeric phosphonic anhydride and conversion to the corresponding cyclic phosphonic anhydride.

Accordingly, Applicants respectfully submit that the claimed invention is patentable in light of Weferling, considered either alone or in combination with the art of record.

Applicants further respectfully submit that the claimed invention is likewise patentable in light of Watanabe. Watanabe discloses the formation of sodium triimidocyclotriphosphate tetrahydrate by reacting PCl_5 with NH_4Cl and then hydrolyzing the resulting product.

Applicants respectfully reiterate that Watanabe, directed to use of chlorinated phosphonium and chlorinated ammonium, does not teach or suggest the claimed process comprising reaction of a phosphonic acid derivative with acetic anhydride.

And Watanabe most certainly does not teach or suggest such processes further comprising the simultaneous distillative removal of a mixture of acetic acid and acetic anhydride and subsequent reactive distillation of the oligomeric phosphonic anhydride and conversion to the corresponding cyclic phosphonic anhydride.

Accordingly, Applicants respectfully submit that the claimed invention is likewise patentable in light of Weferling, considered either alone or in combination with the art of record.

Declaration

Applicants respectfully submit that the Declaration filed on January 20, 2006 complies fully with the requirements of 37 CFR 1.67(a). Specifically, the Declaration as-filed on Page 1 clearly identifies the application as that which was filed on July 8, 2004 as PCT/EP2004/007468, the PCT parent of the above-referenced case. The Declaration as-filed on Page 2 further indicates that the inventors are of German citizenship. Specifically, the Declaration as-filed notes directly below the signature of the fifth inventor, Mr. Hossl, “Citizenship: 1) – 5) Germany”.

CONCLUSION

It is respectfully submitted that Applicants have made a significant and important contribution to the art, which is neither disclosed nor suggested in the art. It is believed that all of pending claims 1 through 8 and 10 through 12 are in condition for immediate allowance. It is requested that the Examiner telephone the undersigned if any questions remain to expedite examination of this application.

It is not believed that fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional fees are necessary to allow consideration of this paper, the fees are hereby authorized to be charged to Deposit Account No. 50-2193.

Respectfully submitted,



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CERTIFICATE OF ELECTRONIC TRANSMISSION

I hereby certify that this correspondence is being electronically transmitted to the United States Patent and Trademark Office PAIR website on July 30, 2008.

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